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Pattern, presentation, and management of intussusception at Abubakar Tafawa Balewa University Teaching Hospital, Bauchi, Nigeria

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ABSTRACT

Objectives: Intussusception is the most common cause of intestinal obstruction in infants. In developing countries, presentation is usually late with an attendant high mortality rate.

Material and Methods: Records of children managed for intussusception at the Abubakar Tafawa Balewa University Teaching Hospital, Bauchi, Bauchi State from 2013 to 2017 were retrieved. Information including the sociodemographic data, the pattern of presentation, treatment, and treatment outcomes were obtained and analyzed using tables.

Results: There were 22 patients, 15 (62%) of whom were male (male-female ratio 2.1:1). Age at presentation ranged from 3 months to 14 years with a peak incidence at 7–8 months. The most common symptoms were vomiting (68%), abdominal pain (59%), and bloody stool (41%). Only 1 patient (4.5%) presented within 24 h of onset of symptoms while 13 (59%) presented after 72 h of onset of symptoms. All patients had open surgery, and ileocolic intussusception was the most common type. Ten patients (45.5%) had a manual reduction, while 12 (55.5%) had resection and anastomosis. Surgical site infection was ranked the highest post-operative complication; the mortality rate was 32%.

Conclusion: Intussusception is a common cause of intestinal obstruction in infants and children in our environment; presentation is usually late. A high index of suspicion is necessary for early diagnosis and treatment to reduce the associated high mortality rate.

Keywords: Infant, Intussusception, Intestinal obstruction, Delayed presentation, Nigeria

INTRODUCTION

Intussusception is the telescoping of a proximal segment of the bowel into an adjourning intestinal lumen.[1] It is the most common cause of intestinal obstruction in infants, usually occurring between 4 and 10 months,[2] with an estimated incidence of 0.5–4.3 cases per 1000 live births in developed countries.[3] It classically presents with a triad of vomiting, colicky abdominal pain, and bloody mucoid diarrhea.

In developing countries, late presentation and subsequently high morbidity and mortality are common.[4]

This study aimed to review the pattern, presentation, and management of intussusception at Abubakar Tafawa Balewa University Teaching Hospital (ATBUTH), Bauchi, North-east Nigeria.

MATERIAL AND METHODS

This was a retrospective study of children managed for intussusception at the ATBUTH, Bauchi, Bauchi State from 2013 to 2017. Records of children aged 15 years or below, managed for intussusception at the ATBUTH, Bauchi, from February 2013 to January 2017 were retrieved. Information on patients' biodata, pre-hospital care, duration of symptoms, clinical features, resuscitation, and treatment outcomes were collected from patient's case notes and the operating register was retrospectively obtained and entered into structured pro forma. Data were analyzed using simple descriptive statistics and charts and frequency tables.

RESULTS

A total of 35 children were managed, but records could only be retrieved and analyzed in 22 patients. Age at presentation ranged from 3 months to 14 years with a median of 11 months. Eleven patients (50%) were <12 months of age.

Fifteen (68%) patients were male and 7 (32%) were female (M: F = 2.1:1). The most common symptoms included vomiting, abdominal pain, and bloody stool [Figure 1]. Only 1 patient (4.5%) presented within 24 h of onset of symptoms while 13 patients (59%) presented after 72 h of onset of symptoms [Figure 2]. One patient (4.5%) presented with a history of anal protrusion of intussusception for seven days. [Figure 3].

All patients had laparotomy; ileocolic intussusception was the most common type in 11 (50%) of cases. Ten patients (45.5%) had a manual reduction, while 12 (55.5%) had resection and anastomosis for either perforation, failed reduction, or out rightly gangrenous bowel.

Seven patients (32%) suffered post-operative complications, which included surgical site infection in 3 (13%), septicemia in 2 (4.5%), and incisional hernia in 2 (4.5%). Eleven (50%) patients had an uneventful postoperative period while seven deaths were recorded, giving a mortality rate of 32%. In 2 (4.5%) patients, death was due to overwhelming sepsis.

DISCUSSION

Intussusception is the most common acquired cause of intestinal obstruction in infants and young children, accounting for 29.23% of intestinal obstruction in children.[5]

In the developed world, the incidence is estimated at 0.5–4.3 per 1000 live births.[3] In Africa, incidence varying from 60 per year to 1 to 2 per year has been reported in Ethiopia and

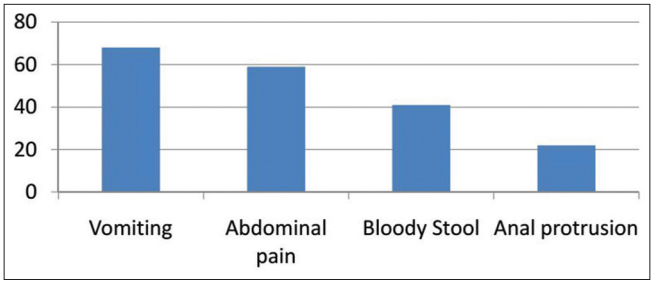

Figure 1: Presenting complaints.

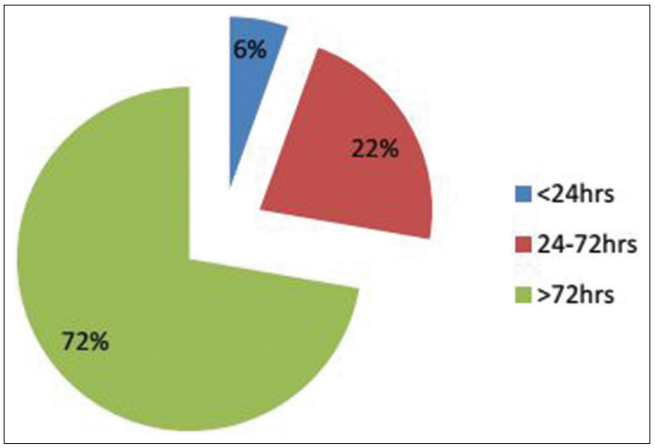

Figure 2: Duration of symptoms.

Nigeria, respectively.[3,4] In our study, a total of 35 patients were identified in 4 years, this represents an average of 8.7 cases a year. This is similar to the eight cases per year reported in Abeokuta by Adesanya *et al.*,[6] but far <25 cases a year reported from Lagos by Bode.[4] Records could be retrieved only in 22 patients, this highlights the challenges of storage, access, safety, and security of medical records.[7] Of the records analyzed, 15 were male, while seven were female, giving a male-to-female ratio of 2.1:1. Male preponderance has consistently been reported in the literature.[1,3,8]

Eleven patients (50%) were <12 months of age with a peak at 7–8 months, findings are similar to those reported by Tagbo *et al.*[3] who reported 88.3% of cases in infants. Patients with intussusception typically present with a triad of vomiting, abdominal pain, and bloody mucoid stool.[8,9] The most frequent clinical features seen in our review were vomiting, abdominal pain (intermittent inconsolable cry in infants), and bloody stools (red currant jelly stool), findings consistent with reports by Ezomike[10] who also reported a transanal protrusion rate of 16% similar to 22% in our study. Only 1 patient (4.5%) presented within 24 h of onset of symptoms, and 21 patients (95.5%) presented after 24 h of onset of symptoms. This pattern of late presentation is consistent with reports by Ekenze *et al.*[11] and Ogundoyin *et al.*[12] This finding is in contrast to reports in developed countries, where most patients presented within 24 h

Figure 3: Late presentation in a 7-month-old girl with a 7-day history of transanal protrusion of intussusception.

of onset of symptoms.[12] The late presentation has been attributed to limited access to health-care compounding poverty and ignorance.[11]

Although ultrasound is the usual investigation of choice for confirming intussusception, it was used in only 15 patients 67% of the cases were due to late presentation. It was confirmatory in 87% of cases in which it was used. This is in contrast to the 100% reported by Okafor *et al*.[8] and Taiwo *et al*.[12]

Anal protrusion of the intussusception was a common finding [Figure 3].

All patients had laparotomy, with ileocolic intussusception being the most common type seen, consistent with previous reports.[4,13] Ten patients (45%) had a manual reduction, while 12 (55%) patients had an intestinal resection, similar to rates reported by Gudugbe *et al*.[1] In a review by Bode,[4] 27.8% of patients who had laparotomy had a bowel resection and anastomosis while Taiwo *et al*.,[12] on the other hand, reported a resection rate of 43.6%; while Tagbo *et al*.[3] reported 31.7%. This is attributable to the delayed presentation and late diagnosis in the hospital, resulting in perforation, and gangrene.[14]

Post-operative complications encountered included surgical site infection, anemia, sepsis, and incisional hernia, not different from those previously reported in the literature.[4,11]

The mortality rate in this study was 32%, well below 63.7% reported by Gudugbe *et al*.,[1] but higher than 5% reported by Tagbo *et al*.,[3] or 16.2% by Madziga and Nuhu.[13] These values are all in contrast to the >1% mortality estimated for developed countries.[2] This particularly high mortality rate may be attributed to the delay in presentation. Furthermore, more of the deaths were attributed to septicemia, thus improved perioperative care including but not limited to more aggressive resuscitation and more judicious use of antibiotics may be necessary to reverse this trend.

Other local challenges identified include limited radiologic expertise to diagnose as well as attempt non-operative reduction when suitable. The paucity of specialists in the field of pediatric surgery is another factor adversely affecting care for children with intussusception, as ours is the only facility in the entire state with a pediatric surgeon.

CONCLUSION

Intussusception is a common cause of intestinal obstruction in infants and children in our environment, presentation is usually late; therefore, a high index of suspicion is necessary for early diagnosis and treatment to reduce the particularly high associated mortality rate.

Recommendation

Health care workers at lower levels of healthcare delivery (primary health centers) need to be able to recognize features of intussusception to enable early referral to reverse the current trend of frequent adverse outcomes.

Declaration of patient consent

Institutional Review Board (IRB) permission was obtained for the study.

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Nil.

Conflicts of interest

Dr. Francis Uba is the Editor-In-Chief and Founder and CEO of the journal.

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